UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD ARTHUR HALAVAIS and TONY CHENG-TONG CHUNG

Appeal No. 2005-1731
Application No. 09/295,577

ON BRIEF

Before BARRETT, BARRY, and LEVY, Administrative Patent Judges.
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-6, 11, 16, 17 and 24-34, which are all of the claims pending in this application.

We AFFIRM-IN-PART and designate the affirmance as a New Ground of Rejection under 37 CFR §41.50(b).

BACKGROUND

The appellant's invention relates to an individual seat selection ticketing and reservation system (specification, p. 1). Claim 1 is representative of the invention, and is reproduced as follows:

1. A method comprising:

(a) communicating on demand, from an information server through a wide area network to a device connected to the wide area network information from a database populated by a multiplicity of entries denoting availability for a venue;

(b) displaying the information such that an end user connected to the wide area network can view the information on a client node unaffiliated with the server as an aid in determining a best then available space conforming to a need of the end user;

(C) providing over the wide area network to the end user the capability of interactively selecting one of a time, a space, and a seat of choice;

(d) accepting over the wide area network from the end user a payment for one of the time, the space, and the seat selection of choice;

(e) returning over the wide area network to the end user verification of the successful completion of the payment.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Huegel	5,239,480	Aug. 24, 1993
Merrill et al. (Merrill)	5,333,257	Jul. 26, 1994
Bricklin	5,621,430	Apr. 15, 1997

Claims 1-6, 11, 16, 17, 24, 26, 27, 29-31 and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Huegel.

Claim 25 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Huegel in view of Merrill.

Claims 28, 32 and 33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Heugel in view of Merrill and Bricklin.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the answer (mailed September 10, 2002) for the examiner's complete reasoning in support of the rejections, and to the brief (filed June 19, 2002) and reply brief (filed November 18, 2002) for the appellants' arguments thereagainst.

Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered. See 37 CFR § 41.37(c)(1)(vii)(eff. Sept. 13, 2004).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellants' arguments set forth in the brief along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

Upon consideration of the record before us, we make the determinations which follow. At the outset, we observe that appellants have divided the claims in eight groupings (brief, page 3). Accordingly, we will consider the claims according to these groupings. We begin with the rejection of claims 1-6, 11, 16, 17, 24, 26, 27, 29-31 and 34 under 35 U.S.C. § 103(a) as being unpatentable over Huegel. We turn first to claim 1, which is representative of claims 1-6, 11, 16 and 17 (Group I).

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations as set

forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

The examiner's position (answer, page 3) is that the self-service terminal of Huegel is not a client node unaffiliated with a server. To overcome this deficiency of Huegel, the examiner takes Official Notice (answer, pages 3-4) that:

> it is well known in the art to provide the same services of a self-service terminal on an unaffiliated computer connected to a network to an end user (checking the balance of a savings account via an on-line banking web site instead of at an automated teller machine).

The examiner asserts that an artisan in the field of online commercial transactions would incorporate this well-known teaching into the invention of Huegel. The rationale provided is that an artisan would have been motivated to enhance the invention of Huegel in such a manner so as not to limit end users to the locality of the self-service terminal.

Appellants' position (brief, pages 4-11) is that Huegel neither teaches nor suggests a client node unaffiliated with a server. Appellants additionally assert (brief, page 11) that:

> Huegel neither teaches nor suggests accepting over the wide area network from the end user a payment for a seat selection of choice. Rather, Huegel discloses that an end user may select a general area of interest while an independent algorithm running on a location processor actually selects individual seats on behalf of the end user.

From our review of Huegel we find (figure 1) that the self service terminal connects to network server 39, which in turn

connects to theaters 41 and stadiums 43. It is disclosed (col. 1, lines 18-22) that it was known to be inconvenient, especially in larger cities, to go to the location of the event to pick up tickets. In figure 3A it is disclosed that examples of location for which tickets can purchased include the Cleveland orchestra as well as the Toronto Symphony and the Lincoln Center. From the disclosure of the buyer being able to purchase tickets for events in diverse areas, we find that the automatic ticketing system of Huegel operates over a wide area network[1].

As to the claim language that the client node is unaffiliated with the server, we observe that the phrase "unaffiliated with the server" is not found in appellants' specification. Thus, we have no specific definition for "unaffiliated." Does "unaffiliated" mean that the client node is at a home computer separate from a kiosk? Does "unaffiliated" mean that the client node is not the event location? Does "unaffiliated" mean that the client node is at the event location but is not owned by the event promoter, etc.? We don't know because the term does not appear in the specification as filed,

[1] We rely upon the Dictionary definition of wide area network, from Que's Computer Dictionary, © 1990, and updated in 1991 and 1992, which defines "wide area network" as a network as a network that connects computers over distances greater than one or two miles. A copy of the pertinent pages are included with the Decision.

including the originally filed claims. Thus, we consider the term "unaffiliated" to have its customary meaning as it would be understood by an artisan. From the disclosure that the self service terminals of Huegel connect to the server over a modem 25, we find the terminals to be "unaffiliated" with the server. In addition, we note that the patent to Huegel was filed on February 12, 1991. At the time of the filing, the use of personal computers and the internet was not as widespread as it was at the time of the filing of appellants' invention on April 22, 1999. We observe that Cue's Computer Dictionary, which was published and updated around the time of the filing of Huegel makes no mention of "Internet," but does refer to ARPANET, a forerunner to the Internet. In addition, we take Notice of the Bank of America[2] website from December 12, 1998, which shows both online banking and an online ATM locator. From the widespread use of the Internet[3], personal computers for on-line banking and

[2] A copy of the Bank of America Web page is included with the Decision.

[3] We find from the textbook Using Netscape 2, Second Edition, © 1995 by Que Corporation, that as of the publishing date of the textbook, that the term Internet is found in the textbook. A copy of the pertinent pages of the textbook are included with the Decision.

ticket purchases[4], we agree with the examiner (answer, page 4) that it was:

> well known in the art to provide the same services of a self-service terminal on an unaffiliated computer connected to a network to an end user (checking the balance of a savings account via an on-line banking web site instead of at an automated teller machine).

Thus, because it was not known to purchase airline tickets, etc. online from a home computer instead of having to travel to a travel agent's office or to an airline office at the time of Huegel's invention but was known prior to appellants' filing of the instant invention, an artisan would have been motivated to use Huegel's system through a home computer rather than having to travel to Huegel's self service terminal. Accordingly, we additionally find that it would have been obvious to have operated Huegel's system from a client node unaffiliated with the server, i.e., from home.

With regard to the assertion that Huegel does not disclose interactively selecting a seat of choice because in Huegel the buyer selects an area and then agrees to accept the seat provided by the system, we find firstly, that even though the proposed

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[4] We take Notice of the web page of Travelocity.com from December 12, 1998, that it was known to make on-line purchases from a home computer prior to the filing of appellants' invention. A copy of the web page is included with the Decision.

seat selection is provided by the system, that if the seat is acceptable to the buyer, the buyer selects the offered seat, or declines the offered seat and is offered a seat in a different area; see Huegel, figure 2B. In addition, we observe that claim 1 recites "selecting one of a time, a space, and a seat of choice." We find that the "time" is met by selecting the date and time of a desired concert that the buyer wants to attend. We additionally find that "space" is met by the location, such as the Toronto Symphony or a selected general seating area by the buyer. We are not persuaded by appellants' assertion (reply brief, pages 2-3) that:

> as disclosed in Appellants' specification, selection of a "time of choice," as recited in Claim 1, refers not to the time of the selected event but rather to a specific time for an appointment (e.g., with a dentist, doctor, or mechanic). This feature of the selection of a time of choice is disclosed in Appellants' specification in the "Background--Field of the Invention" section beginning on page 1.

From our review of the specification, we find (page 4) that time refers to different types of appointments. We find nothing in the language of the specification that would preclude time from referring to the time of a concert.

Nor are we persuaded by appellants' assertion (id. at 3), that:

> "space of choice," as recited in Claim 1, refers not to a seating area of a selected event but rather to a space that generally requires a reservation (e.g., stateroom on a cruise ship). This feature of the selection of a space of choice is disclosed in Appellant's specification at page 10, lines 14-17.

We find that the specification recites (page 10) that:

> the present invention may be readily used to reserve specific seats on commercial airliners or reserve specific staterooms on a cruise ship, as well as for reserving seats for any venue from community theater or little league baseball to major league sporting events.

We find that the specification refers to reserving seats for different events but does not preclude "space" from referring to the venue of an event or to the selection of a general seating area within a venue such as an arenas, by the buyer. Nor are we persuaded by appellants' assertion (brief, page 9) that in Huegel, there is no guarantee that the preferred seat will ever be offered. We note that "preferred seat" does not appear in the claim. Secondly, if the buyer goes though several seat offerings before selecting an offered seat, the buyer has selected a seat of choice. There is nothing in the claim about the seat selection being the buyer's first choice of a seat. In any event, Huegel discloses, for the reasons set forth, supra, selecting a time and space for the event seat to be purchased.

From all of the above, we find that Huegel suggests the invention recited in claim 1. Accordingly, the rejection of claim 1, along with claims 2-6, 11, 16 and 17, which fall with claim 1 (brief, page 3) is affirmed.

We turn next to claim 24 (Group II). The examiner's position can be found on page 6 of the answer. Appellants assert (brief, pages 11 and 12) that in Huegel, "the user is not provided with the option of indicating a specific preference (e.g., choosing a specific seat), as recited in the claim of Group II."

At the outset, we make reference to our findings, supra, with respect to claim 1. We observe that although claim 24 recites that the client node is remote from and unaffiliated with the server, that the claim's reference to a client preference could be a preference for a seat in a general area, or a preference for a particular venue such as a specific sports arena. In addition, the specific preference could be a preference of a given date and time for an event such as a concert. Claim 24 does not recite selection of a specific seat. We do not agree with appellants' statement (reply brief, page 4) that in Huegel, if the user declines the offered seat, the user is left with no seats for the desired event. Huegel discloses in

figure 2B (yes/no feedback loop at the top of the figure) that if the user does not accept the offered seats, the system will find other seats in the arena at a different location. Because the specific preference, as broadly claimed, is met by Huegel, we will sustain the rejection of claim 24. From all of the above, the rejection of claim 24 under 35 U.S.C. § 103(a) is affirmed.

We turn next to claim 25 (Group III). The examiner (answer, pages 8 and 9) turns to Merrill for a teaching of:

> a method for displaying selected assembly-facility seating views that comprises the steps of: retrieving from a database an image showing a view form a seat indicated by the client preference (see column 2, line 63-column 3, line 19); and transmitting the image to the client (see column 3, lines 20-25).

The examiner asserts that the modification would have been obvious because an artisan would have been motived to enhance the invention of Huegel for the purpose of providing relevant data to a user when the user is deciding whether or not to buy tickets.

Appellants assert (brief, pages 12 and 13) that Merrill generates a view from a seat of preference locally on the client system, and that transmission of images is not disclosed.

We find that Merrill (col. 1, lines 6-12) is directed to a system for displaying views from selected seating areas of an assembly facility such as a convention center, concert hall,

stadium, etc. It is disclosed (col. 1, lines 28-33) that current ticketing programs are believed to function with no capability to let a customer see the view that he or she would experience from a seat being offered. The system of Merrill allows the ticket customer to see an approximation of that view for a particular event. Once a the user has made a tentative seat selection, the system finds a proxy seat whose 3D view corresponds as closely as possible to the view from the user's tentatively selected seat (col. 3, lines 11-25). The tickets are purchased, and the seating view are displayed, on an automated teller machine (ATM) (col. 8, lines 15-22).

Claim 25 recites that the specific availability includes seating and retrieving from a database an image showing a view from a seat indicated by the client preference. We note at the outset that specific seating availability can be a general seating area that a client prefers to sit in (such as the first set of rows of a stadium, i.e. the closer seats). From the disclosure of Merrill, we find that upon the user making a tentative selection of a seat, the closed view from the seat will be displayed. If the seat selected is the actual seat whose view is shown, the user will see a view from the exact seat. In view of the disclosure of Merrill, we agree with the examiner that it

would have been obvious to provide Huegel with the enhancement of showing a user a view from the tentatively selected seat, as taught by Merrill. We agree with the examiner's motivation (answer, pages 8 and 9) of providing additional relevant data to the end user. Specifically, we find that an artisan would want to see the view from seats before making a decision to purchase the seats for an event. We are not persuaded by appellants' assertion (brief, page 13) that the rejection should be overturned because Merrill "generates a view from a seat of preference locally on the client system - transmission of images is not disclosed." Whether or not the view is locally displayed or is transmitted to a client node is not dispositive of the issue. It is the teaching of allowing a user to obtain a view from a seat before deciding whether to buy the seat that provides the motivation for combining the teachings of the references. Moreover, from Merrill's disclosure (col. 3, lines 51-56) of using a modem for on-line communications with other computers, e.g., computers maintaining the external ticket database, we find a suggestion of transmitting the views to other computers, since computers maintaining the ticket database are only an example of on-line communications with other computers. In addition, Huegel teaches transferring the user information to a client node (the

self service terminal). From all of the above, we find that the teachings and suggestions of Huegel and Merrill suggest the limitations of claim 25. Accordingly, the rejection of claim 25 under 35 U.S.C. § 103(a) is affirmed.

We turn next to claims 26, 28 and 31-33. Although these claims represent two distinct groups (brief, page 3) appellants present the same arguments for both groups (brief, pages 13 and 14). Appellants' arguments (brief, pages 13 and 14) do not refer to any claim in either group by claim number. We observe at the outset that these groupings are not consistent with the grounds of rejection applied because claims 26 and 31 are rejected over Huegel, whereas claims 28, 32 and 33 stand rejected over Huegel in view of Merrill and Bricklin. Since appellants are entitled procedurally to consideration of at least on claim from each group separately rejected, we will separately consider claims 26 and 32 as representative of the two groups. The examiner's position (answer, page 6) is that the language of claim 6 is met by figure 4 of Huegel. Appellants assert (brief, page 14) that the prior art fails to teach or suggest a graphical representation showing available seats in a first representation and previously sold seats in a second representation.

At the outset, we note that the claim does not recite that all available seats are shown, but rather that available seats are shown. In addition, we note that nothing in the claim, as broadly worded, requires the representations to be on separate displays. As claimed, the two representations can be on different portions of a single display. In addition, the claim does not recite that the available seats and the previously sold seats are highlighted or delineated in any way. In light of the breadth of the claim, we find, for the reasons which follow, that the language of claim 26 is taught by Huegel.

From our review of Huegel, we find that when the first person to purchase tickets is shown the display of the seating plan, the seating plan displays all of the available seats, since all of the seats are available. However, after a first customer purchases seats and a second customer comes along to purchase seats, what is displayed to the next customer is a representation of the entire seating plan with the recommended seats blinking or highlighted (col. 8, line 56 to col. 9, line 2). The second customer, shown the entire seating plan with the recommended seats blinking is also shown all of the other seats, which includes both the available and unavailable seats. This meets the language of claim 26 in view of our interpretation of the

claim, supra, since both the available and previously sold seats are in the display. Accordingly, we are not persuaded of any error on the part of the examiner, and find that the teachings of Huegel meets the language of claim 26. The rejection of claim 26 under 35 U.S.C. § 103(a) is therefore affirmed.

Turning to claim 32, the claim additionally recites "clicking on a desired seat." From our review of Merrill, we find that Merrill discloses the use of a keyboard or mouse as a user input device (col. 2, lines 1-4) and further discloses (col. 3, lines 1-4) that the user is prompted by the system to enter a tentative seat selection, we find that Merrill suggests the language of claim 32. Accordingly, we find that the language of claim 32 is met by the teachings of Huegel and Merrill, and find Bricklin to be cumulative to the teachings of these two references. Accordingly, the rejection of claim 32, and claims 28, 31 and 33, which fall with claims 26 and 32 is affirmed.

We turn next to claim 27 (Group V). Claim 27 recites that the indication of specific availability is transmitted as one of a hypertext markup language and a Java® applet. The examiner's position (answer, page 7) is that it is known to transfer and present data using a hypertext markup language page and a Java® applet.

Appellants assert (brief, page 14) that:

> "Nowhere in Huegel is hypertext markup language or Java™ applets disclosed. Thus, a *prima facie* case of obviousness has not been established."

We find from the textbook Using Netscape 2 (cited, supra) that hypertext markup language (HTML) is the underlying programming language that the World Wide Web (WWW) is based on, and that Java applets are small programs that can be downloaded and displayed on your screen. As we stated, supra, because the Internet was not known or well known as of the time of filing of Huegel's invention, but became popular prior to the filing of appellants' invention, an artisan would have been motivated to allow a user to use Huegel's system from the user's computer over the Internet. Since the language of the Internet is HTML, HTML would have been used to transmit the information.

We are not persuaded that a prima facie case is not made because Huegel does not disclose HTML or Java® applets. To traverse the taking of Official Notice by the examiner, the appellants should have either stated that the examiners statement was incorrect, or that they do not know the examiner's statement to be true. If appellant elects to traverse the examiner's taking of Official Notice, it is not sufficient to merely argue that this finding is not supported by the reference, because

appellant may know this to be true even if it is not expressly in the references. A "traverse" is "[a] formal denial of a factual allegation in the opposing party's pleading," Black's Law Dictionary (7th ed. 1999).

From all of the above, we are not convinced of any error on the part of the examiner. The rejection of claim 27 under 35 U.S.C. § 103(a) is affirmed.

We turn next to claim 29 (Group VI). The examiner's position is found on page 7 of the answer. Appellants assert (brief, page 14) that in Huegel, payment information is directed to a credit card payment authority that is separate from the server, and that Huegel does not disclose accepting payment at the server. From our review of Huegel, we are in agreement with the appellants that Huegel does not teach accepting payment information at the server 39, but rather connects to the credit card authorization authorities directly from the self-service terminal. Accordingly, the rejection of claim 29 under 35 U.S.C. § 103(a) is reversed.

We turn next to claims 30 and 34 (Group VII). We observe that claim 30 refers to specific availability, but does not recite what specific availability options are referred to. We find that the specific availability options can be a specific

arena, a specific time and dat or to a specific area of seats in a stadium. Accordingly, we affirm the rejection of claim 30 for the same reasons as we affirmed the rejections of claims 1 and 24. Accordingly, the rejection of claims 30 and 34 under 35 U.S.C. § 103(a) is affirmed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-6, 11, 16, 17 and 24-28 and 30-34 under 35 U.S.C. § 103 is affirmed. The decision of the examiner to reject claim 29 under 35 U.S.C. § 103(a) is reversed. However, because we have additionally relied upon a Que's Computer User's Dictionary, Using Netscape 2, and the printouts of the Bank of America and Travelocity.com Web sites to supplement the examiner's reasoning and taking of Official Notice, we designate our affirmance of claims 1-6, 11, 16, 17, 24-28 and 30-34 as a New Ground of Rejection under 37 CFR § 41.50(b) and expressly include these additional references into the rejection.

This decision contains a new ground of rejection pursuant to 37 CFR § 41.50(b) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)). 37 CFR § 41.50(b) provides "[a] new ground of

rejection pursuant to this paragraph shall not be considered final for judicial review."

37 CFR § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> (1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .
>
> (2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

OBSERVATIONS AND REMARKS

In view of our findings, supra, the examiner should consider conducting an additional prior art search for a reference that, in combination with Huegel, would suggest connecting the self service terminal of Huegel to a server for credit card authorizations, as recited in claim 29.

AFFIRMED-IN-PART and New Ground of Rejection 37 CFR § 41.50(b).

LEE E. BARRETT)
Administrative Patent Judge)
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) BOARD OF PATENT
LANCE LEONARD BARRY) APPEALS
Administrative Patent Judge) AND
) INTERFERENCES
)
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Que's Computer User's Dictionary.

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Interpretation of the printing code: the rightmost double-digit number is the year of the book's printing; the rightmost single-digit number, the number of the book's printing. For example, a printing code of 90-1 shows that the first printing of the book occurred in 1990.

Acknowledgments

No one individual could possibly undertake a task of this magnitude, and in creating this dictionary, I had some terrific co-workers. I thank Lloyd Short for convincing me that my breadth of knowledge was sufficient to undertake this project, as daunting as it seemed.

After the first draft reached Carmel, Indiana, it was tackled by a world-class editorial team. I particularly thank the two technical editors, Walter R. Bruce and Timothy S. Stanley; if this book is said to have merit, their distinguished contribution and expertise should be recognized in the next breath.

I also thank my editors, Kelly D. Dobbs, Jo Anna Arnott, Fran Blauw, Jeannine Freudenberger, Cheryl Robinson, and Daniel Schnake. They saved me from myself in innumerable ways. Very special thanks are due, last but not least, to Karen Bluestein, who in desktop publishing this book labored long hours.

Que gave me the freedom to attempt a totally new kind of dictionary, a user's dictionary: it's a dictionary written from the user's viewpoint, and it's about computing from the user's perspective. Academic types and lexicographers may find this approach wrong-headed or even to pose a danger to Civilization for having obfuscated nice, tidy, academic distinctions, but I am the proper target for their ire, not those who aided me so much as I pursued my goal. If computer users find this dictionary of value in defining the world of computing as they see it, I will be more than satisfied.

A warm boot is preferable to a cold start after a system crash because it places less strain on your system's electrical and electronic components. With IBM PC-compatible computers, you restart the system by pressing Ctrl-Alt-Del, although sometimes this command will not unlock the system.

Some IBM PC-compatible computers have buttons or switches that make a hardware restart possible; Macintosh users must install the programmer's switch before this maneuver is possible. See *live copy/paste* and *warm link*.

warm link A connection established between two files or data items so that a change in one is reflected by a change in the second. A warm link does not require user intervention and action, such as opening both files and using an updating command, to make sure that the change has occurred; the change is made automatically. See *cold link*.

weight The overall lightness or darkness of a typeface design, or the gradations of lightness to darkness within a font family.

A type style can be light or dark, and within a type style, you can see several gradations of weight (extra light, light, semilight, regular, medium, semibold, bold, extrabold, and ultrabold). See *typeface*.

Weitek coprocessor A numeric coprocessor, created for computers that use the Intel 80286 and Intel 80386. This coprocessor offers significantly faster performance than the Intel 80287 and Intel 80387 and is widely used for professional computer-aided design (CAD) applications.

Unlike the Intel 80287 and 80387, however, programs cannot use the Weitek coprocessor unless they are modified to do so. See *computer-aided design (CAD)* and *numeric coprocessor*.

what-if analysis In spreadsheet programs, an important form of data exploration in which key variables are changed to see the effect on the results of the computation.

What-if analysis provides businessmen and professionals with an effective vehicle for exploring the effect of alternative strategies, such as "What will my profits look like if I were to invest another $10,000 in advertising, assuming past trends hold true?"

what-you-see-is-what-you-get (WYSIWYG) Pronounced "wizzy-wig." A design philosophy for word processing programs in which formatting commands directly affect the text displayed on-screen, so that the screen shows the appearance of the printed text. See *embedded formatting command*.

white space The portion of the page not printed. A good page design involves the use of white space to balance the areas that receive text and graphics.

wide-area network A computer network that uses high-speed, long-distance communications networks or satellites to connect computers over distances greater than the distances (one or two miles) traversed by local area networks.

widow A formatting flaw in which the last line of a paragraph appears alone at the top of a new column or page.

Most word processing and page layout programs suppress widows and orphans; better programs enable you to switch widow/orphan control on and off and to choose the number of lines. See *orphan*.

wild card Characters, such as asterisks and question marks, that stand for any other character that may appear in the same place.

In DOS, you have two wild cards: the asterisk (*), which stands for any character (and any number of characters), and the question mark (?), which stands for any one character.

Wild card	*Stands for*
REPORT1.*	REPORT1.DOC REPORT1.BAK
REPORT?.DOC	REPORT1.DOC REPORT2.DOC REPORT3.DOC

internal font See *printer font*.

internal hard disk A hard disk designed to fit within a computer's case and to use the computer's power supply.

→ **Tip:** Because internal hard disks do not require their own power supply, case, or cables, they generally cost less than external hard disks of comparable quality.

internal modem A modem designed to fit into the expansion bus of a personal computer. See *external modem* and *modem*.

interpreter A translator for a high-level programming language that does not create an executable version of a program; instead, an interpreter translates and runs the program at the same time.

Interpreters run a program more slowly than compilers, because a compiler does all the translating before the program is run.

However, interpreters are excellent for learning how to program, because if an error occurs, the interpreter shows you the likely place (and sometimes even the cause) of the error. You can correct the problem immediately and execute the program again. In this way, you learn interactively how to create a successful program. If a compiler is available for the programming language you are using, you can compile the program to make it run faster. See *compiler*.

interrupt A microprocessor instruction that halts processing momentarily so that input/output or other operations can take place. When the operation is finished, processing resumes.

In a hardware interrupt, the instruction is generated within the computer as the control unit manages the flow of signals within the machine. In a software interrupt, a program generates an instruction that halts processing so that a specific operation can take place.

invisible file See *hidden file*.

I/O See *input/output (I/O) system*.

italic A posture of a serif typeface that slants to the right and commonly is used for emphasis. See *oblique* and *Roman*.

ITC Avant Garde Pronounced "ah-vahnt gard´." A sans serif typeface frequently used for display type applications.

Modern in appearance, Avant Garde—a design owned by the International Typeface Corporation (ITC) and licensed to Adobe Systems—is more mannered than Helvetica and should be used when a touch of informality is desired (see fig. I.4). ITC Avant Garde is included as a built-in font with many PostScript laser printers.

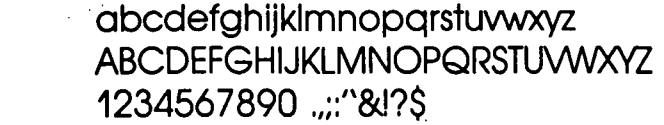


Fig. I.4. The ITC Avant Garde typeface.

ITC Bookman A serif typeface frequently used for body type.

Bookman, a design owned by the International Typeface Corporation (ITC) and licensed to Adobe Systems, conveys a contemporary feeling and has widely spaced characters that make Bookman easy to read even in text-intensive documents (see fig. I.5). ITC Bookman is included as a built-in font with many PostScript laser printers.

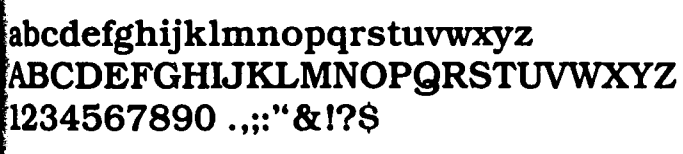


Fig. I.5. The ITC Bookman typeface.

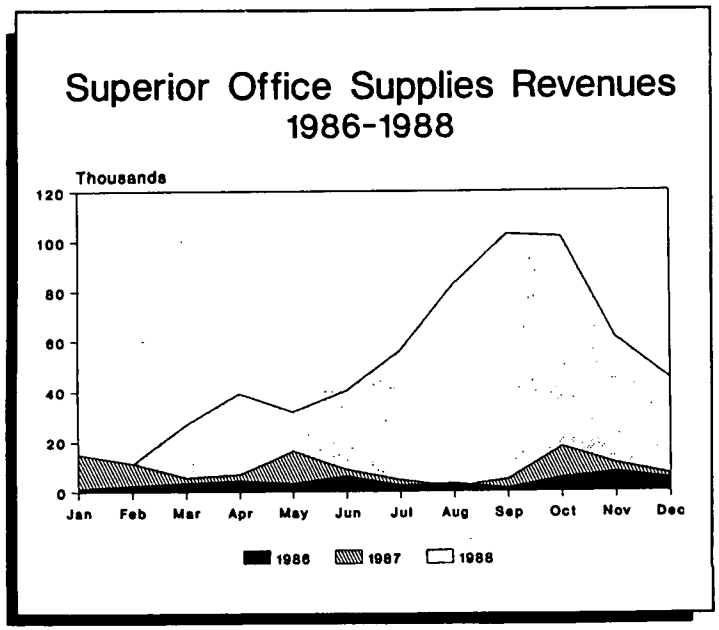


Fig. A.4. An area graph.

argument Words, phrases, or numbers you enter on the same line as a command or a statement to expand or modify the command or statement. The command acts on the argument.

In the dBASE expression, USE customer, USE is the command and customer is the argument. In Lotus 1-2-3, the arguments of built-in functions are enclosed in parentheses, as in @SUM(B1..B3).

➔ **Tip:** Think of the command as a verb and the argument as an object of the verb. See *argument separator* and *parameter*.

argument separator In spreadsheet programs and programming languages, a comma or other punctuation mark that sets off one argument from another in a command or statement.

Many commands, such as the built-in functions of spreadsheet programs, require you to provide information, called an argument, that the program needs to execute the command. For example, the @CTERM function in Lotus 1-2-3 requires three arguments: interest, future value, and present value. You must specify all three arguments, separated by commas:

```
@CTERM(.012,14000,9000)
```

The argument separator is essential in commands that take more than one argument. Without the separator, the program cannot tell one argument from another.

➔ **Tip:** If you are having trouble getting a command or function to work, make sure that you know exactly how many arguments the command or function requires and that you have separated the arguments with the correct separator. Some programs don't allow spaces after the separator. If you are used to pressing the space bar after typing a comma, you may have to delete unnecessary spaces.

arithmetic operator A symbol that tells the program how to perform an arithmetic operation, such as addition, subtraction, multiplication, and division.

In almost all computer programs, addition is represented by a plus sign (+), subtraction by a hyphen (-), multiplication by an asterisk (*), and division by a slash (/). See *comparison operators* and *logical operator*.

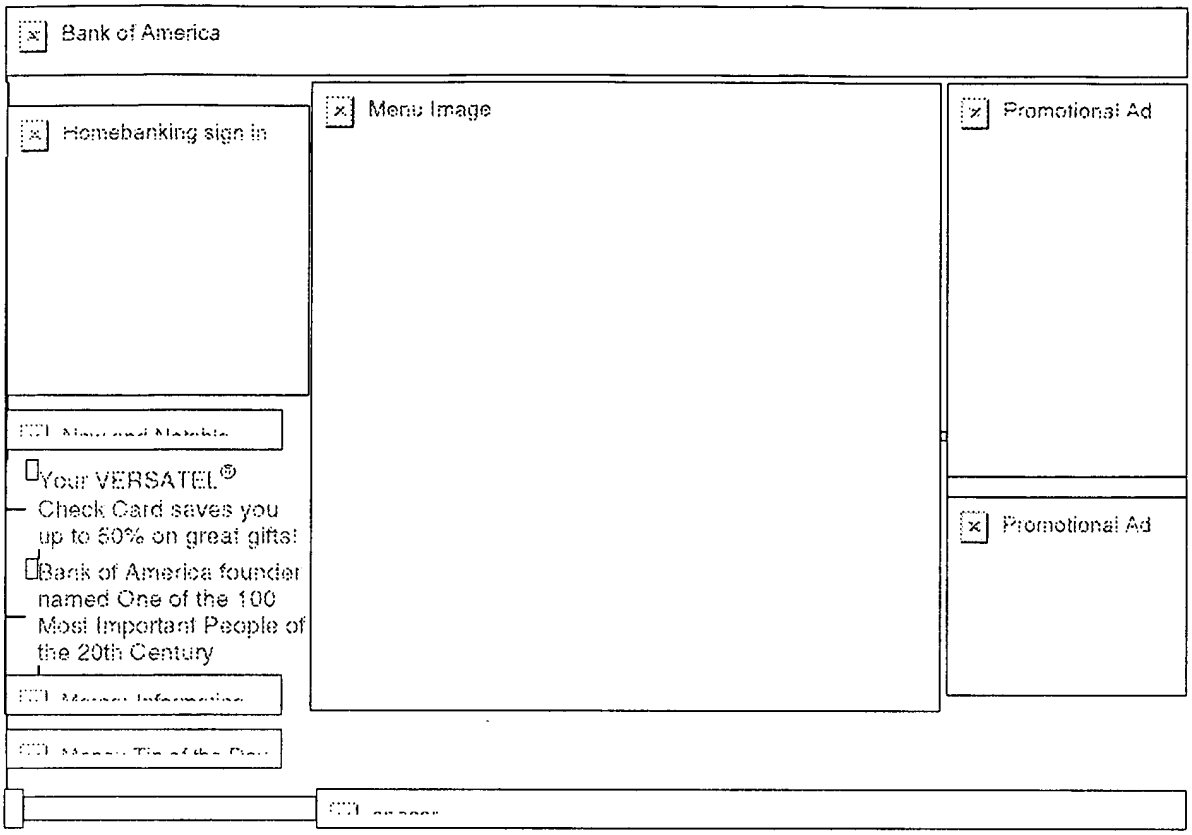
arithmetic/logic unit (ALU) The portion of the central processing unit (CPU) devoted to the execution of fundamental arithmetic and logical operations on data.

ARPANET A wide-area network supported by the U.S. Defense Advanced Research Projects Agency (DARPA) and intended to support advanced scientific research.

Access to ARPANET is restricted to a small group of advanced researchers as its broader communication functions are being taken over by NSFNET. See *wide-area network*.

array One of the fundamental data structures in computer programming; a single- or multidimensional table that the program treats as one data item.

arrow keys See *cursor-movement keys*.



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Part I, "Internet Fundamentals," explains what the Internet and World Wide Web are, and what they are likely to become in the future. It explains how the Web is organized and how it works. This section also presents an overview of what's new in Netscape 2.0.

Part II, "Mastering Netscape," talks you through loading and configuring Netscape for Windows, Windows 95, Macintosh, and UNIX. Both Netscape 2.0 and Netscape Personal Edition are covered. This section also tells you how to navigate on the Web using links, online search engines and indexes, bookmarks, and Netscape's new SmartMarks program. You'll also find information on how to use online forms, including a discussion of security. The section wraps up with information on using Netscape to access Internet services other than the World Wide Web, like e-mail, FTP, Gopher, and UseNet news.

Part III, "Using Helper Applications," guides you through the process of finding and configuring Netscape helper applications for audio, graphics, and video. You'll also be introduced to VRML (Virtual Reality Modeling Language) and SGML (Standard Generalized Markup Language), learn how they fit into the Web, and how to view them using Netscape helper applications. Adobe Acrobat and other portable document formats are also covered, as are compressed files and how to deal with them.

Part IV, "Building World Class Home Pages for Netscape," gets you started with HTML (HyperText Markup Language), the language used to create Web pages. You'll learn how to create links and use advanced graphics techniques like imagemaps to make your Web pages dynamic. You'll even learn about Netscape-specific and proposed future HTML commands. Finally, you'll discover how to work with the Web's most advanced page development tools, forms, and CGI-bin scripts.

Part V, "Building World Class Web Sites and Servers for Netscape," builds on the knowledge you gained in part IV, tying together Web page creation techniques to help you build an excellent Web site. Then you'll ride along on a test-drive of the Netscape Commerce server, the software for the "other end" of the Web that delivers Web pages to users.

Part VI, "Advanced Netscape Customization," delves into the depths of Netscape 2.0's most powerful new features, with chapters on Sun's Java language for C, C++, and JavaScript customization of Netscape. This section finishes with a discussion of plug-ins, Netscape 2.0's exciting new feature that allows inline viewing of multimedia.

An appendix finishes out the book with information on what you'll find on the book's CD-ROM.

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CHAPTER 26

HTML Primer

As you've worked with the World Wide Web, you've most likely come across HTML, the underlying programming language that the WWW is based upon. While not as difficult to understand or use as other computer languages out there, HTML has its own quirks and idiosyncrasies that require you to spend some time learning about it. Unlike standard programming languages, HTML is a *formatting* language. You start with a page of pure text, and then add special HTML attributes that tell Netscape how to display that information on-screen.

In the last chapter you learned how to prepare for building your own WWW site. That was only the first step. This chapter takes you right into HTML and serves as an introduction to build your own Web pages. In addition to learning all the basic markup tags, you'll become familiar with using horizontal lines, tables, and other popular HTML attributes.

Specifically, in this chapter you learn how to do the following:

- Use basic HTML tags
- Separate paragraphs of displayed text
- Include several types of lists in your HTML document
- Build a sample HTML document from scratch

Creating an HTML File

As mentioned in the last chapter, there are several tools available to make it easier to create HTML files. Some automated HTML editors take advantage of powerful drag and drop and WYSIWYG (What You See is What You Get) capabilities, which make writing HTML a much simpler process. Instead of memorizing dozens of different, specific HTML tags and codes, editors allow

But you are probably asking, "Why does this interest me, a Netscape 2.0 user?" The reason that it should is that Netscape 2.0 has a Java interpreter built in, which means that instead of just downloading pictures, sound, and text, Netscape 2.0 can download small programs called *applets*, which are then run on your computer. These applets, which are written in Java, can display animations, allow you to play games, or get stock prices from a remote computer. Whatever these applets do, you don't have to worry about them crashing your system, spreading a virus, or wiping out your hard drive.

In this chapter, you learn

- What a Java Applet is
- How Java Applets are changing the Web
- How Java works in Netscape
- What people have been designing Java Applets to do
- Where to find a wealth of online Java resources

Why Java Is Waking Up the Internet

In the Spring of 1995, Sun Microsystems released a Web browser called HotJava. This Web browser was written in a new programming language called Java. This language was originally intended to handle such tasks as interactive television and coordination of household appliances. The explosion of the Web in 1994 revealed the real opportunity for Java, and work on the Web browser commenced.

Though this Web browser was rough around the edges, it could do some things no other Web browser at that time could. With this Web browser, a user could see animation, play games, and even view a ticker tape of their up-to-date stock prices. Almost immediately after its release, Netscape decided to license HotJava's technology and incorporate it into its browsers. Netscape's incorporation of this technology into Netscape 2.0 makes this technology available to a much wider audience than before. This wider audience, along with the capabilities that Java provides, is revolutionizing the Web.

What Is a Java Applet?

Netscape 2.0 can run *Java Applets*, which are small programs that are downloaded from a Web server. There isn't anything special about how it does this; it downloads a Java Applet in precisely the same manner as it downloads any file. Just as any browser displays an image as it is received, a Java-capable

browser runs the Java Applet. When the Java Applet runs, it is much (but not exactly) like any other program that can run on your computer. It can take input from your keyboard, mouse, or even a remote computer. The output displays on your screen.

But there are differences between a Java Applet and the applications that sit on your desktop. You wouldn't want Netscape 2.0 to download a virus. At the same time, you wouldn't want to have to check every program that came down, because most programmers have no interest in harming your computer. Because of the way that the Java language is structured, you don't have to worry about a Java Applet harming your computer.

But this does mean that there have been some restrictions placed on Java Applets. In fact, a Java Applet knows next to nothing about your computer. It can't look or write to any file in your file system. It can use your computer's memory, but not directly. These restrictions on a Java Applet keep your computer safe from harm, and also protect your privacy.

How a Java Applet Is Different from the CGI Program

Anyone who has been around the Web for a while knows that programs can be run on the Web without Java. One of the reasons the Web, without Java, has become so popular is that the Web allows simple interaction across the Internet. It does this through the Common Gateway Interface (CGI). The CGI underlies electronic forms, imagemaps, and search engines. Basically, it runs a program that resides on the server. The program, called a CGI *program*, outputs a Web page, and that Web page is sent back to the client (see fig. 34.1).

The Common Gateway Interface puts the Web a step above other information protocols such as FTP and Gopher because it allows you to tell a remote computer to do things for you. It is great for information providers because they can let you do very specific tasks without having to give you, and the rest of the world, the run of their machines.

CGI programs are great for a lot of things. For instance, let's say that you are an officer of a club that is running a Web server. Through the use of a simple CGI program, you can give your members a way to keep their mailing addresses up to date. You can put an electronic form on your Web site, and if someone moves, she can just access that form and enter her new address. Then, the CGI program takes that information and updates the database.

However, there are many limitations of CGI programs that applets overcome (see table 34.1).

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